

**PATENT CLAIMS**

1. System for electronic registration of logbooks for a number of persons in connection with air travel, which system comprises a central computer for the registration and the processing of the electronic data representing the individual person's logbook and one or more terminals for the input of the electronic data in question,

wherein the data input into the central computer regarding a specific flight performed by a person comprises:

information on the identity of the person,  
information on the flight number,  
information on the time of departure and arrival and consequently the flying time as well as the places of departure and arrival of the flight,  
information on the status of the specific persons during the flight,

wherein the input of the data is performed by the person in question in a process comprising two steps, the first step comprising the input of the data into the terminal and control of the data in question, including correction of any erroneously input data, if any, and the second step comprising a permanent storing and data processing of the data in question in the computer, the permanent storing preventing a subsequent correction of any of the input data, wherein the input of data in the computer in the second step is performed in a process where the access to the computer is only obtained by positive verification of conformity between the identity of the person and a personal code word or password,

wherein the person obtains access to the central computer for the output of data regarding the person in question by using said personal code word or password, i.e. for the reading of the person's personal logbook, and

wherein an authority, i.e. an airline or an aviation authority obtains access to data contained in the computer regarding a specific person by using a specific first code, and obtains access to the data in the computer regarding a specific aircraft's flights by using a second code.

2. System for the electronic registration of cosmic radiation dose for a person performing a flight, which system comprises a central computer for the registration and the processing of the electronic data representing the individual person's logbook and one or more terminals for the input of the electronic data in question, wherein the data input into the central computer for a flight performed by the person in question comprises:

information on the identity of the specific person,

information on the date of the flight,

information on the flight number,

information on the time of departure and arrival and consequently the duration of the flight, as well as the places of departure and arrival,

wherein the input of the data is performed by the person in question in a process comprising two steps, the first step comprising the input of the data into the terminal and control of the data in question, including any correction of erroneously input data if necessary, and the second step comprising the calculation of the radiation dose and a permanent storing of the data in question in the computer, the permanent storing preventing a possible subsequent correction of any of the input data,

wherein the input of the data into the computer in the second step is performed in a process where the access to the computer is only obtained by positive verification of conformity between the identity of the person and a personal code word or password, and

wherein the person obtains access to the central computer for the output of data regarding the person in question by using said personal code word or password.

3. System according to claim 2, wherein the calculation of the radiation dose is performed by using a three-dimensional network dividing the airspace in longitude, latitude and altitude and by using the programme called CARI-developed by FAA's Civil Aerospace Medical, or an equivalent dose calculation programme.

4. System according to any of the claims 1-3, wherein the system further comprises a GPS unit, which, for the person or for all the persons of an aircraft,

carries out a calculation of the person's or the aircraft's position, either continuously or periodically in relation to the longitude, the latitude and the altitude.

5. System according to any of the claims 1-4, wherein calculations are performed as follows:

1. a great circle arc is created between the airport of departure and the airport of arrival

2. the arc is divided in a number of pieces which correspond to the same number of minutes of the flight

3. the position and altitude are calculated according to each point of the great circle arc

4. the radiation per hour is calculated in the reference point with the neutron counting number of the time by means of the function with the constants as indicated in Table 4, where the relevant constants are selected from the calculated altitude of the aircraft (cf. the profile of the aircraft) at the time in question

5. the radiation power is corrected to the calculated position by getting the quotient for the actual position/altitude from the position database, and multiplying the radiation power of the reference point with the quotient.

6. the radiation dose is calculated as 1/60 of the result from point 5.

7. the time of sunrise and sunset in the point in question is calculated, and it is subsequently decided whether the latest minute of flying is to be characterised as "Flying time day" or "Flying time night".

8. when this is done for each of the many points of the route, the partial doses are summed up to the whole of the dose of the flight

9. the dose of the flight is distributed to each of the crew members which are indicated on the crew list. - Details about the flight are furthermore indicated to the pilots, which is required by the rules for the keeping of flying time. For the rest of the crew members, including so-called passive transfers (crew members to/from active service from/to their base), flight information, which is necessary for identifying the flight in question later on; is indicated.

10. For pilots, the flying time, when on service, is summed up including accumulated "Flying time day" and accumulated "Flying time night". For a pilot who has been on board as a passenger (passive transfer), only the radiation columns are summed up. For all others (flight crew members and passengers), all the columns are summed up.

6. System according to any of the claims 1-5, wherein the individual terminal is constituted by a computer unit or in particular a PC with a control programme for the execution of the input procedure or, alternatively, constituted by a PC or a similar electronic data registration device connected to the Internet in a wireless or wired set-up, such as a personal organiser or WAP telephone for the input of the data into the central computer via the Internet.

7. System according to any of the claims 1 -6, wherein the data input into the central computer further comprise information regarding a possible flight in the dark, in fog or other weather with low visibility (IFR), and furthermore information on whether the flight can be characterised as "Cross-Country" and also any information or remarks of technical matters during the flight.

8. System according to any of the claims 1-7, wherein the electronic data input into the central computer further comprising data regarding the specific aircraft, i.e. aircraft type, aircraft registration etc.

9. System according to claim 7, wherein the data regarding the specific aircraft when entering said second code are made available for the reading by an airline or an aviation authority.

10. System according to any of the claims 1 to 9, wherein the central computer when reading the person's logbook adds an authenticity code to the printout, which authenticity code is generated on the basis of data regarding the person, among others the person's date of birth and the complete flying time and perhaps also the date and hour of the printout, as this authenticity code when using a decryption

programme is decrypted by the aviation authorities in order to prove the authenticity of the printout.

11. Method for the electronic registration of logbooks for persons by using a computer system comprising a central computer for the registration and the calculation of the electronic data representing the individual person's logbook and one or more terminals for the input of the concerned electronic data, which method comprises the input of data into the central computer for a flight performed by a person comprising:

information on the identity of the person,

information on the date of the flight,

Information on the flight number,

information on the time of departure and arrival and consequently on

the duration of the flight and information on the places of departure and arrival,

information on the type of flight (e.g. scheduled flight, training, military etc.)

information on the status of the person during the flight,

wherein the input of the data is performed by the person in question is carried out in a process comprising two steps, the first step comprising the input of the data into the terminal and control of the data in question, including any correction of erroneously input data, and the second step comprising the calculation of night flying time and the radiation dose as well as a permanent storing of the data in question in the computer, the permanent storing preventing a possible subsequent correction of the input data,

wherein the input of the data in the computer during the above mentioned second step is performed in a process, in which the access to the computer is only obtained by positive verification of conformity between the identity of the person and a personal code word or password,

wherein the person obtains access to the central computer for the reading of data about the person in question, i.e. output of the personal pilot logbook of the person in question, by using said personal code word or password, and

wherein an aviation authority, i.e. an airline company or an aviation authority obtains access to data contained in the computer regarding a specific person by using a specific first code, and obtains access to the data in the computer regarding a specific aircraft's flights by using a second code.

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12. Method for the electronic registration of cosmic radiation dose for a person performing a flight by using a computer system comprising a central computer for the registration and the calculation of the electronic data representing the individual person's logbook and one or more terminals for the entry of the electronic data in question, the method comprising the input into the central computer of data for a flight performed by a person comprising:

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information on the identity of the specific person,

information on the date of the flight,

information on the flight number,

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information on the time of departure and arrival and consequently the

duration of the flight, as well as the places of departure and arrival,

wherein the input of the data is performed by the person in question in a process comprising two steps, the first step comprising the input of data into the terminal and control of the data in question, including any correction of erroneously input data, if necessary, and the second process comprising the calculation of the radiation dose and a permanent storing of the data in question in the computer, the permanent storing preventing any subsequent correction of any of the input data,

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wherein the input of the data into the computer in the second step is performed in a process, where the access to the computer is only obtained by positive verification of the conformity between the identity of the person and a personal code word or password, and

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wherein the person obtains access to the central computer for the output of data regarding the person in question by using said personal code word or password.

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12. Method according to claims 11 or 12, wherein the method is further organised for the execution of the functionality in the system according to any of the claims 1 to 10 and for the execution of the programmes referred to in the enclosed Annex 1 and Annex 2.